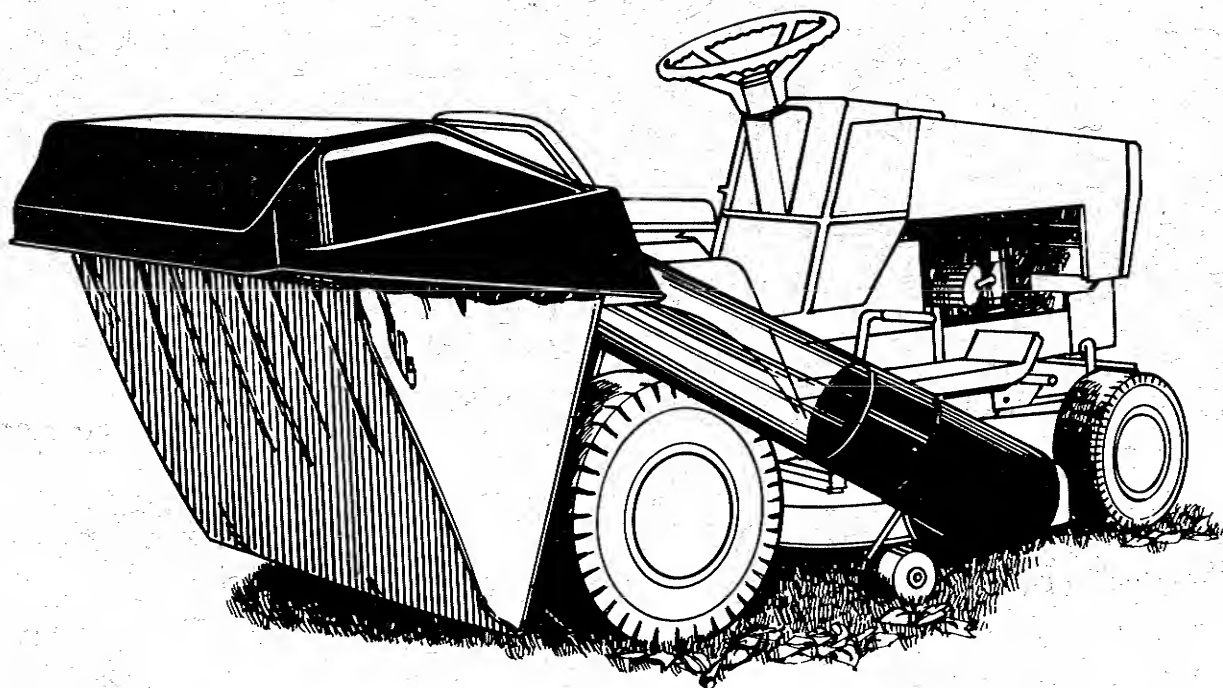


OPERATOR'S MANUAL REAR GRASS CATCHER



REAR GRASS CATCHER
MFG. NO. 1690229
REAR GRASS CATCHER
MFG. NO. 1690657

Specifications

DIMENSIONS

Height: 29 inches (74 cm) (top of cover to bottom of bag)
Width: 39 inches (99 cm) (overall of cover)
Width: 46 inches (107 cm) (left side of tractor to extreme right of grass catcher)
Length: 36 inches (91 cm) (Center of rear tire to back edge of cover)
Ground Clearance: 6 inches (15 cm) (ground clearance to bottom of bag)
Weight: 26-1/2 lbs. (12 kg)
Capacity: 5 bushels (0.18 cubic meters) heaped

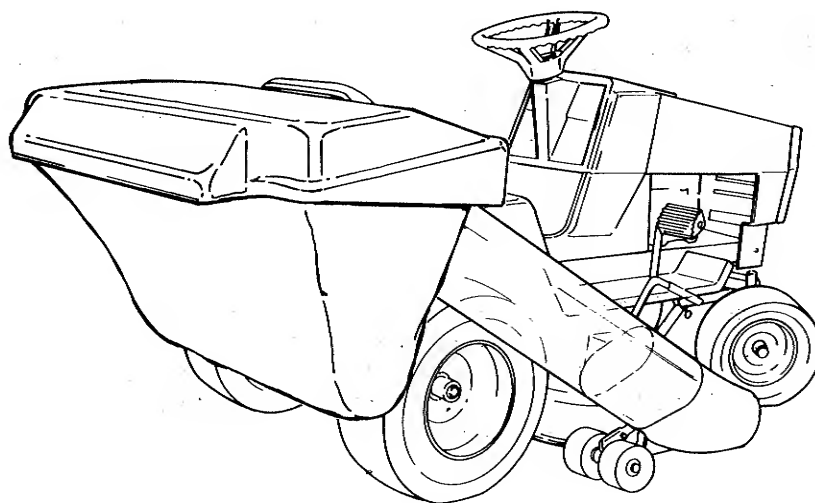
MATERIAL

Adaptor: Cross linked polyethylene
Tube: Clear low density polyethylene
Cover: High density linear polyethylene
Bag: Polyester fabric and vinyl construction
Deflector: No. 20 ga. steel
Frame: Welded steel tubing

SPECIAL REQUIREMENTS

On slopes over 15 percent (8.5°) use two rear wheel weights (Mfg. No. 1690555). Always use the front counterweight with the grass catcher. Never operate on slopes greater than 30 percent (16.7°).

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.



IMPORTANT SETUP INFORMATION


To assemble and install the grass catcher for the first time, perform the "Setup Instructions" at back of manual. After initial installation, the "Setup Instructions" will not be needed. To remove and reinstall the grass catcher, refer to "Removal and Installation" at front of manual.

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Safety Rules



Read these safety rules and follow them closely. Failure to obey these rules could result in loss of control of vehicle, severe personal injury to yourself or bystanders, or damage to property or equipment. The triangle  in the text signifies important cautions or warnings which must be followed.



ALL WARNING, CAUTION, and instructional messages on your tractor and attachment should be carefully read and obeyed. Personal bodily injury can result when these instructions are not followed.

GENERAL

- Read the tractor Operator's Manual and the grass catcher Operator's Manual carefully. Be familiar with the proper and safe use of the equipment.
- Never allow children to operate the machine. Do not allow adults to operate it without proper instruction.
- Do not carry passengers.
- Keep the area of operation clear of all persons, particularly small children and pets.
- When using any attachments, never direct discharge of material toward the bystanders nor allow anyone near the vehicle while in operation.
- Make sure:
 - a. tractor and attachments are in good operating condition,
 - b. all safety devices and shields are in place,
 - c. and in good working condition, and
 - d. all adjustments, (cutting height, etc.), have been made.

PREPARATION

- Handle gasoline with care - it is highly flammable.
 - a. Use approved gasoline container.
 - b. Never remove the cap of the fuel tank or add gasoline to a running or hot engine, or fill the fuel tank indoors. Wipe up spilled gasoline.

- Do not run the engine indoors. Exhaust fumes are dangerous.
- Clear the work area of objects which might be picked up and thrown.
- Disengage all attachment clutches and shift into neutral before attempting to start the engine.
- Wear heavy footwear. Do not operate tractor when barefoot or when wearing open sandals or canvas shoes.
- Make sure entire unit is installed. Never operate grass catcher without grass bag, cover, discharge tube or adaptor.

OPERATION

- Disengage power to attachment(s) and stop the engine before leaving the operator's position.
- Disengage power to attachment(s) and stop the engine before making any repairs or adjustments.
- Shut the engine off, remove the key and wait for moving parts to stop before unclogging chute or emptying grass bag.
- Stay alert for holes in the terrain and other hidden hazards. Be extra careful when operating on wet or slippery surfaces.
- The vehicle and attachments should be stopped and inspected for damage after striking a foreign object, and the damage should be repaired before restarting and operating the equipment.

- Disengage power to attachment(s) when transporting or not in use.
- When using the vehicle with mower, proceed as follows:
 - a. Mow only in daylight or in good artificial light.
 - b. Never operate the tractor without the mower clutch safety interlock switch properly attached and working.
 - c. Check the blade mounting bolts for proper tightness at frequent intervals.
- Do not stop or start suddenly when going uphill or downhill. Mow up and down the face of steep slopes; never across the face.
- Reduce speed on slopes and in sharp turns to prevent tipping or loss of control. Use extreme caution when changing direction on slopes.
- Watch out for traffic when crossing or near roadways.
- If equipment begins to vibrate abnormally - disengage power to attachments and stop engine at once. Inspect for damage and correct before starting up tractor.

- Limit loads to those you can safely control.
- Do not turn sharply. Use care when backing.
- Use counterweight(s) or wheel weights when suggested in the operator's manual.
- Take all possible precautions when leaving the vehicle unattended, such as disengaging the power take off, lowering the attachment(s), setting the parking brake, stopping the engine and removing the key.
- Keep the vehicle and attachments in good operating condition and keep safety devices in place.

MAINTENANCE & STORAGE

- Keep all nuts, bolts and screws tight to be sure the equipment is in safe working condition.
- To reduce fire hazard, keep the engine and mower free of grass, leaves or excessive grease.
- Never store the equipment with gasoline in the tank inside a building where fumes may reach an open flame or spark. Allow the engine to cool before storing in any enclosure.

Read carefully and become familiar with the instructions on the two safety decals. The instructions are for your safety and are important. The **WARNING** decal is located on the grass catcher cover, and the **CAUTION** decal is located on the grass catcher bag assembly.

WARNING

1. Disengage mower and turn off engine before removing cover. Do not remove catcher tube from adapter or bag while mower is running.
2. When operating on slopes, use front counter weight (available from your dealer).
3. Never operate mower without the grass catcher unless mower discharge deflector is installed.

CAUTION

1. Do not remove bag while engine is running or operate mower with bag removed.
2. This bag is subject to deterioration and wear during normal usage.
3. Inspect the bag periodically for tears, holes, or weak spots, and replace with a new bag or with a bag meeting manufacturer's durability requirements.

Removal & Installation

REMOVAL

1. Lift cover (E, figure 1) off bag assembly (D). Clips on underside of cover will unlock from bag frame as you lift.
2. Lift bag assembly (D) off hanger, folding bag back as needed to clear grass discharge tube (A).

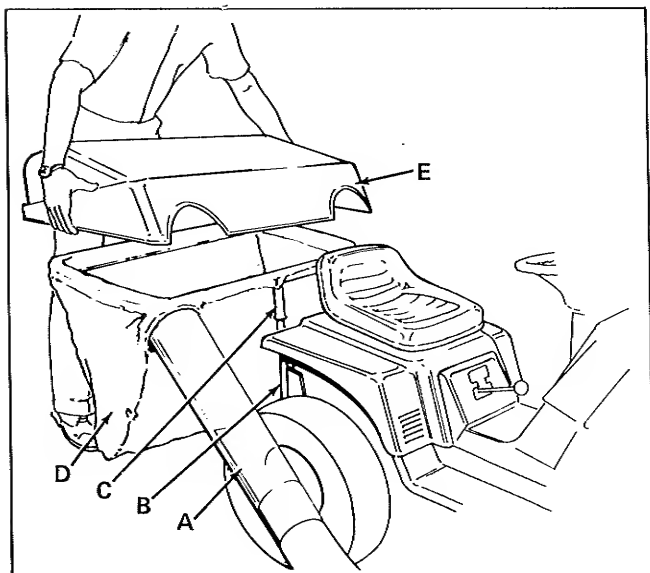


Figure 1. Install Bag & Cover

- | | |
|-------------------------|-----------------|
| A. Grass Discharge Tube | D. Bag Assembly |
| B. Hanger Tubes | E. Cover |
| C. Bag Tubes | |

3. Remove spring clip (C, figure 2).
4. Lift hanger (D) off tractor. Then reinstall spring clip (C) in hole of pin (B) at bottom of hanger.
5. Slide grass discharge tube (E) up and off grass catcher adaptor (F).
6. Remove nuts, lockwashers and flat washers (B through G, figure 3). Then remove grass catcher adaptor (H) from mower.
7. To prevent loss, reinstall nut, lockwasher and flat washer (E, F and G).

WARNING

If grass catcher is removed, always install original mower deflector as described in step 8 before operating mower. The grass catcher adaptor must be used only with the grass catcher and should not be used by itself in place of the mower deflector. The mower baffle may remain in place.

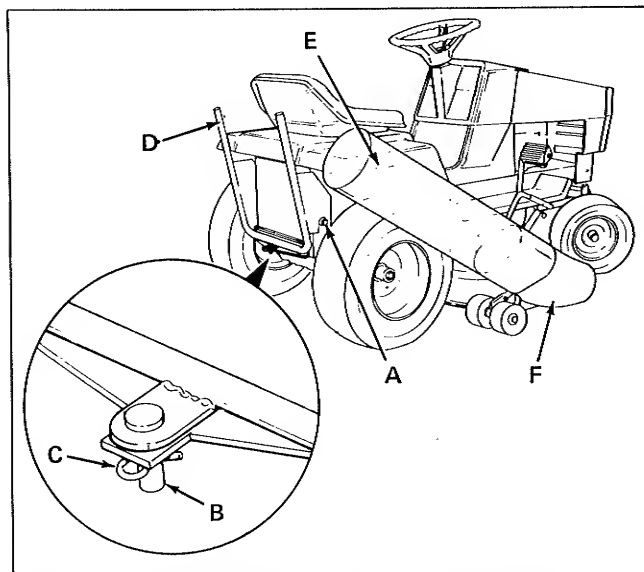


Figure 2. Install Hanger & Discharge Tube

- | | |
|-------------------------|--------------------------|
| A. Spacers (both sides) | D. Hanger |
| B. Pin | E. Grass Discharge Tube |
| C. Spring Clip | F. Grass Catcher Adaptor |

8. If mower is to be used without grass catcher, install original mower deflector (A) onto mower using flat washers, lockwashers and nuts (B, C and D).

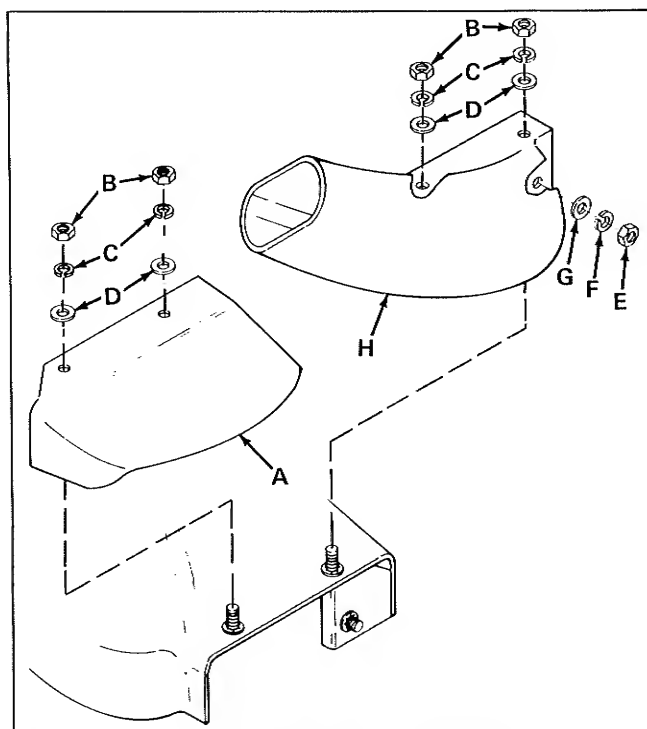


Figure 3. Install Grass Catcher Adaptor

- | | |
|--------------------|--------------------------|
| A. Mower Deflector | E. Nut |
| B. Nut | F. Lockwasher |
| C. Lockwasher | G. Flat Washer |
| D. Flat Washer | H. Grass Catcher Adaptor |

INSTALLATION

NOTE

If the grass catcher has not been assembled, refer to "Setup Instructions" at back of manual to assemble and install the grass catcher.

1. Remove the deflector (A, figure 3). The deflector is held in place with two nuts, lockwashers and flat washers (B, C and D).
2. Remove nut, lockwasher and flat washer (E, F and G) from bolt on side of mower discharge opening.
3. Place grass catcher adaptor (H) over bolts at mower discharge opening. Again install flat washers, lockwashers and nuts removed in steps 1 and 2 to hold adaptor in place.
4. Install hanger (D, figure 2) on tractor. Pin (B) at bottom of hanger fits into hole in tractor while slots on side of hanger fit over spacers (A).
5. Install a spring clip (C) through hole in end of pin (B).
6. Install grass discharge tube (E) with its screws on the bottom (facing down), over discharge tube of grass catcher adaptor (F). The tube should be installed so that the edge of tube (at seam) points away from tractor. This will aid flow of grass thru tube.
7. (See figure 1.) Install bag assembly (D) by slipping its tubes (C) over tubes (B) of hanger.
8. Slip grass discharge tube (A) into hole of bag assembly.
9. Position cover (E) over frame of bag assembly and push it down firmly so clips on underside of cover lock onto frame.
10. Make sure the front counterweight is installed. See "Front Counterweight" on page 12. For operation on slopes, install two rear wheel weights (one on each rear wheel).

Operation & Care

CHECKS BEFORE EACH USE

1. Check the mower and grass catcher to be sure they are properly installed and all nuts, bolts and pins are securely fastened.

WARNING

Never operate the mower unless the mower deflector or the entire grass catcher is completely installed.

2. Clear the lawn of all sticks, stones, wire and other debris which may be caught or thrown by the mower blades.

OPERATING THE GRASS CATCHER

WARNING

Do not work around the mower housing or grass catcher until you are certain that the mower blades have stopped rotating.

Never operate the unit with the grass bag cover or discharge tube removed.

Also see warnings on page. 6.

The grass catcher collects grass or leaves as they are discharged from the mower. It is operated by running the tractor and mower. Consult the tractor operator's manual if you have any questions on tractor and mower operation.

During operation, it is necessary to check the bag contents at intervals. If the bag is full or nearly full, empty it as described in "Empty the Grass Catcher". Otherwise, the bag can overfill and quickly cause filling and plugging of the discharge tube and mower.

Filling of the bag or plugging of the mower is easily detected if the tube is kept reasonably clean. Simply watch the flow of grass through the tube (occasionally) as you mow. Always watch for objects in direction of travel.

Best results will usually be obtained with engine set at full throttle. When the grass is heavy, run the engine at full speed and slow down the tractor ground speed.

Do not try to collect damp or wet grass. Wet grass will stick to the mower. Wait until dew or rain has evaporated before mowing.

When collecting leaves or mowing tall grass, raise the mower to highest cutting height and make one pass over the area to be cleared. Then lower the mower and make a second pass to complete the mowing. In extremely tall or heavy grass, it may also be necessary to cut only half the width of the mower to prevent clogging of the mower and discharge tube.

EMPTY THE GRASS CATCHER

WARNING

Before emptying grass catcher, always stop tractor, disengage mower PTO drive, apply parking brake, stop engine and remove key.

To empty the grass catcher, pull up on cover to unsnap clips. Remove cover and set it aside. Then lift grass bag assembly off hanger, folding bag back as necessary to clear discharge tube. Turn bag assembly over to empty it and then reinstall it on hanger. Tap cover a few times to remove any material on the inside. Then place cover back over bag assembly and push it firmly to lock clips to bag frame.

AFTER EACH USE

After each use, empty the grass catcher as described above. If the bag is wet, dry it. Store the grass catcher on or off the tractor in a dry, enclosed area.

WARNING

Never operate on slopes greater than 30 percent (16.7°) which is a rise of three feet vertically in 10 feet horizontally.

WARNING

When operating on slopes that are greater than 15 percent (8.5°) but less than 30 percent use rear wheel weights (see your dealer). Use slow ground speeds. Mow up and down the face of slopes and never across the face. Use caution when changing directions and **DO NOT STOP OR START.**

WARNING

When mowing with the grass catcher, always use the front counterweight.

CAUTION

Do not allow gasoline or other petroleum products to come in contact with the plastic grass discharge tube. These products will cause the tube to become brittle and crack.

OFF-SEASON STORAGE

To protect your grass catcher, store it in an enclosed dry area. If stored in a garage, keep the bag assembly on a shelf or hang it on a wall where the bag will not come in contact with water or melted snow. Store the cover and grass discharge tube in a similar manner to prevent breakage. Clean the unit to remove all grass and dirt. Coat all bare metal surfaces with paint or a light coat of oil to prevent rusting.

Troubleshooting

CONTENT OF SECTION

This section provides troubleshooting instructions for the more common and easily corrected problems.

WARNING

To avoid serious injury, perform maintenance on the grass catcher only after stopping the tractor engine and waiting for all moving parts to come to a complete stop. Always remove the ignition key before beginning the maintenance to prevent accidental starting of the engine.

TROUBLESHOOTING PROCEDURES

Troubleshooting procedures are provided in figure 4. To use these procedures, first locate the problem description that best describes the trouble that you have encountered. Check the possible causes one at a time in the order that they are listed. Correct any problems that are found and operate the grass catcher again to verify that you have eliminated the trouble.

<u>Problem</u>	<u>Cause/Remedy</u>
1. Leaves and grass not being completely picked up.	<ul style="list-style-type: none">A. Engine speed too low. Run at 3/4 to full throttle.B. Ground speed too fast. Use lower gear.C. Mower drive belt slipping. Increase belt tension per tractor manual.D. Discharge tube plugged. Stop engine and remove key. Then remove and unplug discharge tube.E. Using wrong mower blade. Install blade with large lift tabs that were supplied with grass catcher.
2. Grass catcher discharge tube or mower plugs easily.	<ul style="list-style-type: none">A. Grass or leaves too wet. Wait for drier conditions.B. Grass too high. Reduce tractor ground speed, reduce cutting width or raise mower height for the first pass, lower it for the second pass.C. Dump cart full. Empty cart.D. Screens in grass bag cover are clogged. Remove cover and clean screens.E. Using wrong mower blade. Install blade with large lift tabs that were supplied with grass catcher.F. Build-up of cut grass in mower or adaptor. Clean thoroughly.
3. Discharge tube works off grass catcher adaptor on mower.	Tube too tight. Increase diameter of tube. (See figure 12.)

Figure 4. Troubleshooting

Setup Instructions

ATTENTION SETUP PERSONNEL:

As setup personnel you have an obligation to know the product better than the customer. This includes safety related items. Prior to actual setup, thoroughly familiarize yourself with the Operator's Manual. Pay special attention to all safety warnings. It is possible during setup to place yourself in a position which is more hazardous than when the unit is in operation. Remember, it is your responsibility to set up the product safely and to know it well enough to be able to instruct a customer in the safe use of his power unit.

Safety is a matter of common sense . . . A matter of thinking before acting. Most shops have specific safety practices. Follow them. The precautions listed in the Operator's Manual should not supersede existing practices but should be considered as supplemental information.

NOTE

The sizes of the fasteners are indicated in the figure legends. To help identify a fastener, refer to the chart on the inside back cover of the manual.

INTRODUCTION

When the grass catcher is received disassembled, follow these instructions to assemble the grass catcher and install it on the tractor. After the grass catcher is set up, these instructions will not be needed again. To remove or reinstall the grass catcher see "Removal and Installation" section at front of manual.

INSTALL HANGER & BAG

1. Two spacers (F, figure 5), one on each side of tractor rear support frame, must be installed. Remove existing nuts, lockwashers, and cap screws (A, B and C) from tractor. For access to nuts on inside of frame, reach up and under the rear frame panel. Install spacers using longer cap screws and flat washers (D and E) supplied with grass catcher and lockwashers and nuts previously removed from tractor.
2. Install hanger (D, figure 6) on tractor. Pin (B) at bottom of hanger fits into hole in tractor hitch while slots on side of hanger fit over spacers (A).
3. Install spring clip (C) through hole in end of pin (B).

4. Fully open zipper and place bag inside frame with discharge tube hole in right of frame support tubes as shown in figure 7. Pull bag forward and slip holes nearest edge over frame support tubes (F). Slip the support tubes (F) over the tubes of the hanger (D, figure 6). Start and fully close the zipper to hold bag to frame.

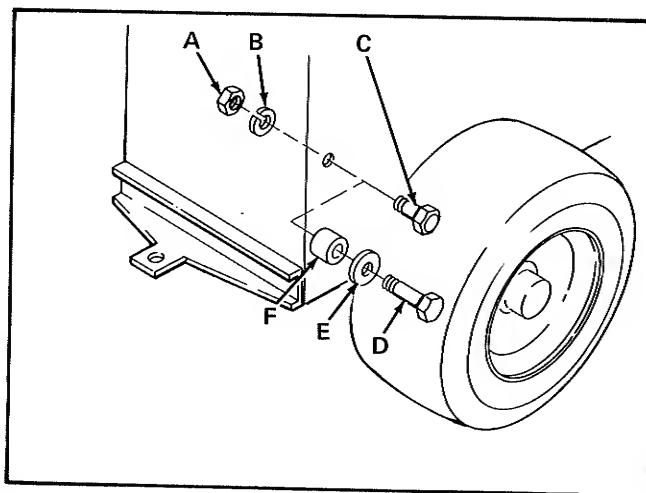


Figure 5. Install Parts On Tractor

- | | |
|--------------------------|--------------------------|
| A. Nut | D. Capscrew, 3/8 x 1-1/4 |
| B. Lockwasher | E. Flat Washer, 3/8 |
| C. Capscrew (on tractor) | F. Spacer |

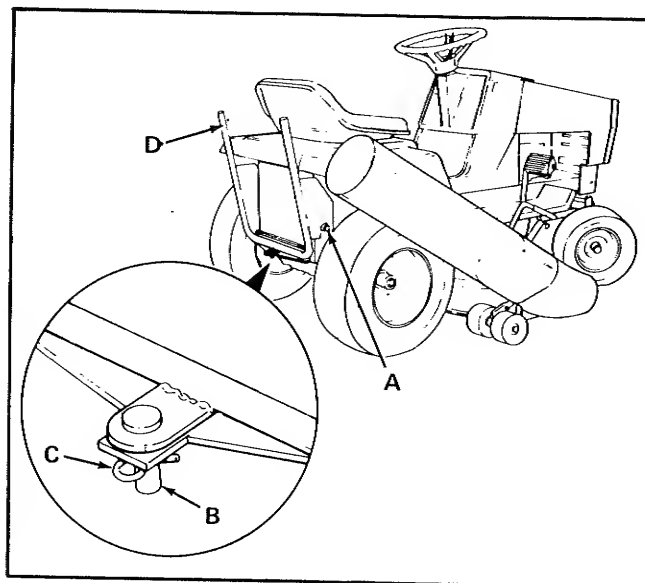


Figure 6. Install Hanger & Discharge Tube

- | | |
|-------------------------|----------------|
| A. Spacers (both sides) | C. Spring Clip |
| B. Pin | D. Hanger |

- Place the deflector (E, figure 7) inside of frame with narrow part near right front corner as shown in illustration. Fasten deflector to frame at this point using one of the small diameter capscrews (D) received with the grass catcher. Add a lockwasher (C) on the inside of the deflector and then install and tighten a nut (B).
- Bend deflector to shape shown in figure 7 so other end fits inside of frame. Secure this end of the deflector to the frame using two capscrews (D), lockwashers (C) and nuts (B).

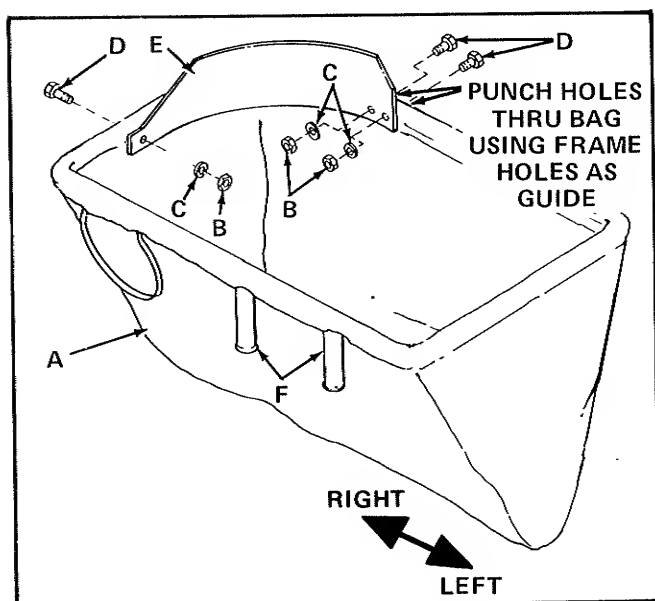


Figure 7. Assemble Bag Unit

- A. Bag
- B. Nut, 1/4 (4 places)
- C. Lockwasher, 1/4 (3 places)
- D. Capscrew, 1/4 x 1-1/4 (3 places)
- E. Deflector
- F. Frame Support Tubes

INSTALL HIGH LIFT BLADE, BAFFLE & ADAPTOR

- Remove the mower from the tractor. (See removal procedure in tractor Operator's Manual.)
- The blade on the discharge side must be removed. Install the highlift blade shipped with the grass catcher in its place. To do this, refer to the blade removal and installation procedures in your tractor Operator's Manual. (see "Clean, Sharpen & Balance Blades"). The tabs of the highlift blade must

point up toward mower deck. Be sure to torque blade mounting bolt to 50 ft. lbs. as described in Operator's Manual.

- Place discharge baffle (B, figure 9) in mower as shown. Use a self-tapping screw (J) to secure midpoint of baffle.
- Use carriage bolt (I), washer (D), lockwasher (E) and nut (F) to secure inner end of baffle.
- Use carriage bolt (A), washer (N), lockwasher (M) and nut (L) to secure outer end of baffle. Install carriage bolt from the outside as shown.
- Insert remaining carriage bolt (C) supplied with grass catcher through hole in end of discharge baffle. Install a pushnut (O) on outer end of this bolt. To install a pushnut, use a box wrench to push the nut fully down on the bolt threads so it holds the bolt to the mower (figure 8).
- Reinstall mower on tractor as described in installation procedure given in tractor Operator's Manual.

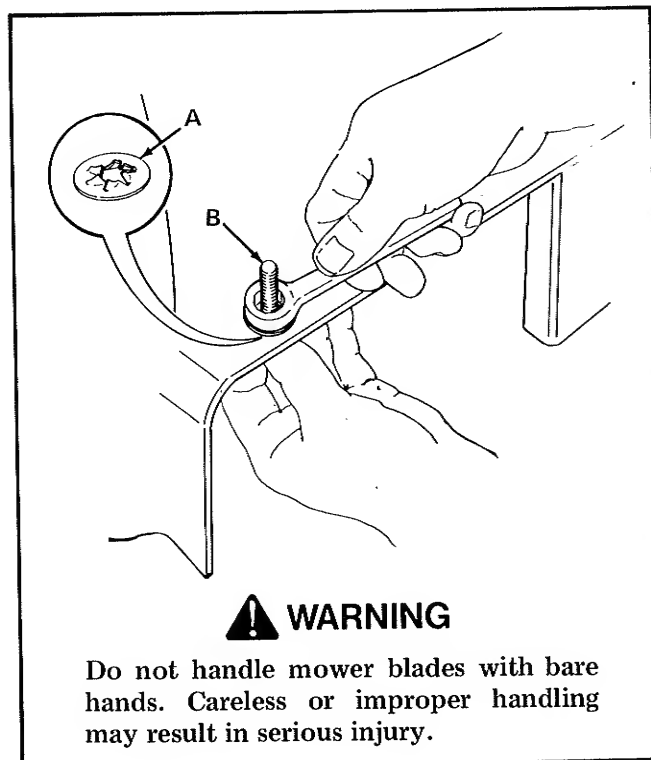


Figure 8. Install Pushnuts

- A. Pushnut
- B. Carriage Bolt

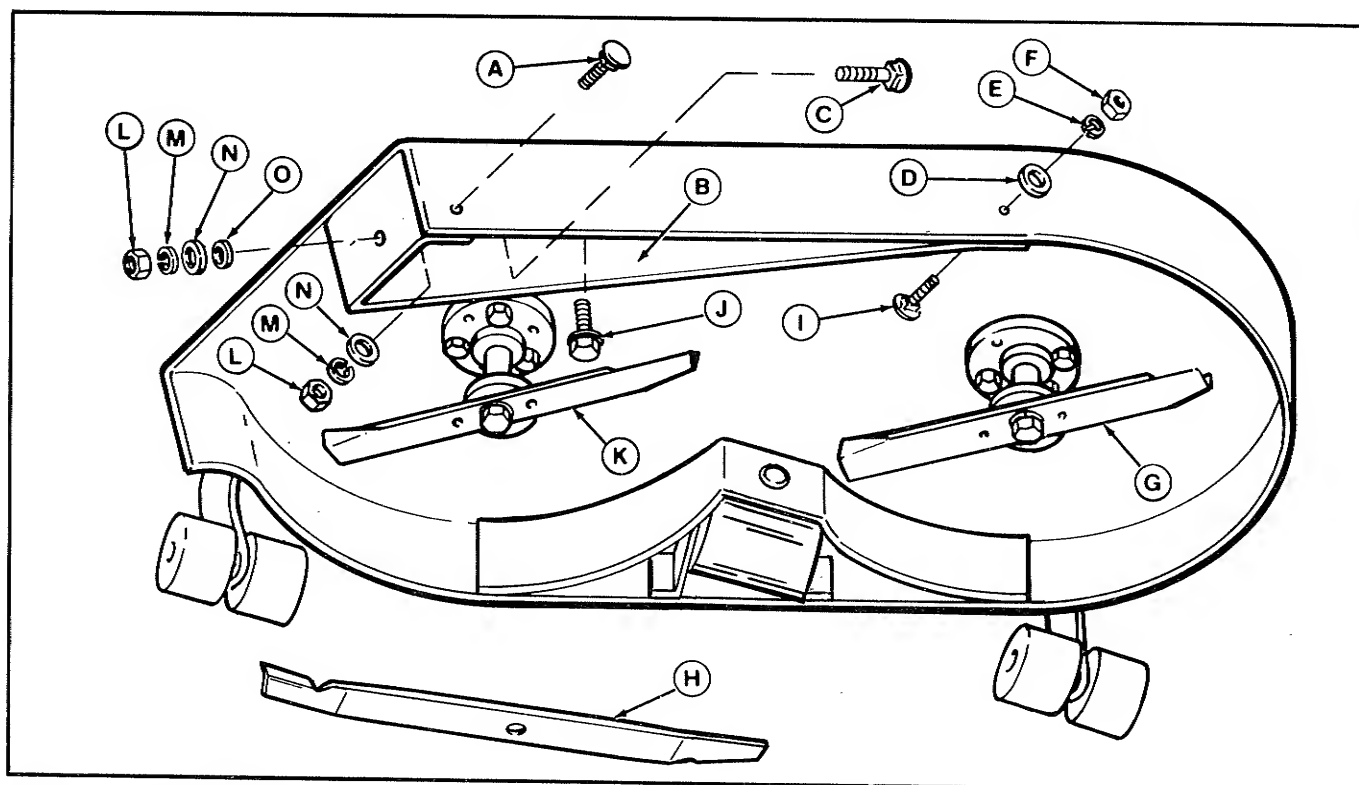


Figure 9. Install Baffle

- A. Carriage Bolt, 3/8 x 3/4
- B. Discharge Baffle
- C. Carriage Bolt, 3/8 x 3/4
- D. Flat Washer, 1/4
- E. Lockwasher, 5/16
- F. Nut, 5/16
- G. Mower Blade
- H. Grass Catcher Blade
- I. Carriage Bolt, 5/16 x 3/4
- J. Self-Tapping Screw, 5/16 x 1/2
- K. Mower Blade, Discharge Side
- L. Nut, 3/8
- M. Lockwasher, 3/8
- N. Flat Washer, 3/8
- O. Pushnut

8. Remove discharge deflector (B, figure 10) from mower. The deflector is held in place by two carriage bolts, lockwashers and nuts (A, C and D).

9. Install two carriage bolts removed in step 8 upward through holes in mower. Place a pushnut on the end of each bolt. Use a box wrench to push the nut fully down on the bolt threads so it holds the bolts to the mower as shown in figure 10.

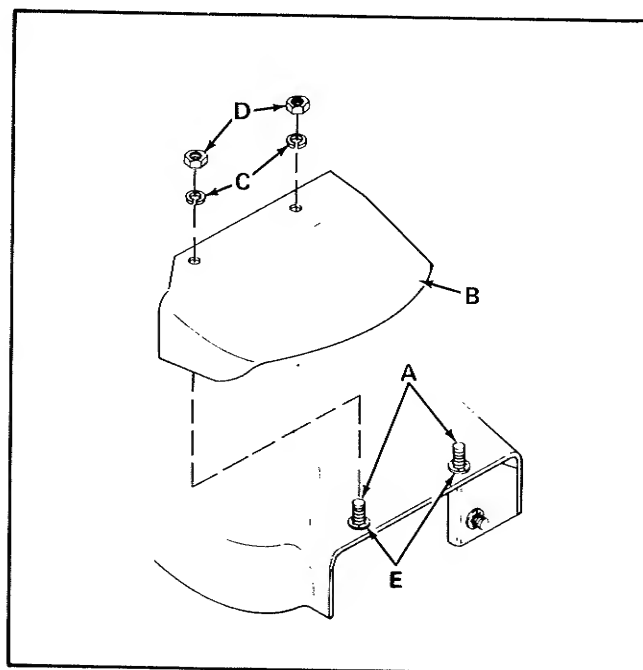


Figure 10. Remove Discharge Deflector

- | | |
|--------------------|-------------|
| A. Carriage Bolts | D. Nuts |
| B. Mower Deflector | E. Pushnuts |
| C. Lockwashers | |

10. Place the grass catcher adaptor (H, figure 11) over the three bolts at mower discharge opening. Install the large flat washers received with grass catcher and deflector hardware on the two top bolts. Install the flat washer, lockwasher and nut (G, F and E) received with grass catcher on the other bolt.

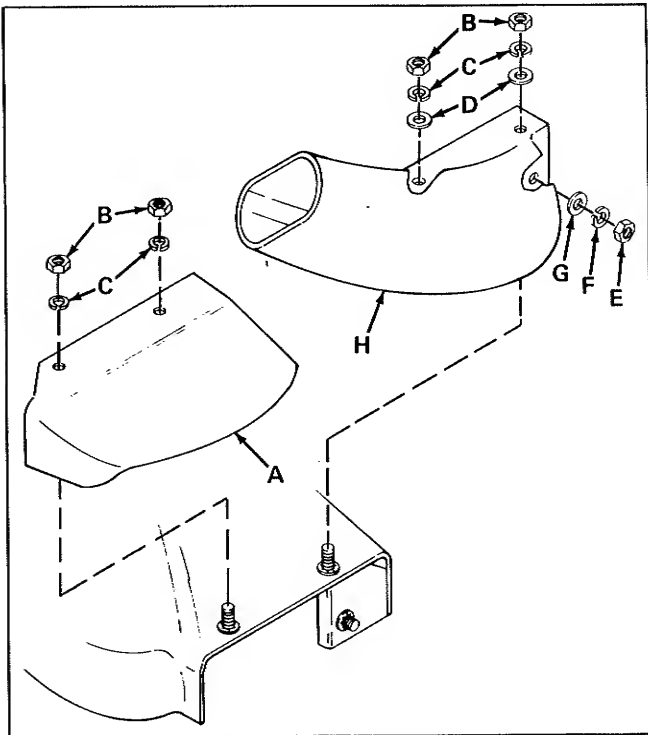


Figure 11. Install Grass Catcher Adaptor

- | | |
|---------------------|--------------------------|
| A. Mower Deflector | E. Nut, 3/8 |
| B. Nut | F. Lockwasher, 3/8 |
| C. Lockwasher | G. Flat Washer, 3/8 |
| D. Flat Washer, 3/8 | H. Grass Catcher Adaptor |

INSTALL GRASS DISCHARGE TUBE & COVER

To assemble the grass discharge tube, roll the clear plastic material (C, figure 12) into a tube. Place a flat washer (A) on a screw (B) and insert the screw through the pair of holes along the edges of the plastic. The screw head must be on the inside of the tube. Then place another flat washer (D) and a lockwasher (E) on the screw outside of the tube before installing the nut (F). Repeat this procedure six more times to fasten the tube together at the seven sets of holes. Then tighten all seven nuts. Install the tube and cover as follows.

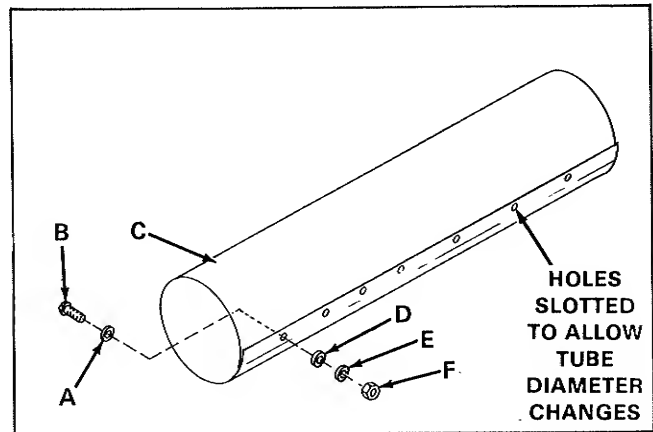


Figure 12. Assemble Discharge Tube

- A. Flat Washer, 13/64 ID, 1/2 OD
 B. Screw, 3/8 lg.
 C. Plastic Material
 D. Flat Washer (same as A)
 E. Lockwasher
 F. Nut

1. Install grass discharge tube (A, figure 13) with its screws on the bottom (facing down), over discharge tube of grass catcher adaptor (F). The tube should be installed so that the edge of tube (at seam) points away from operator.

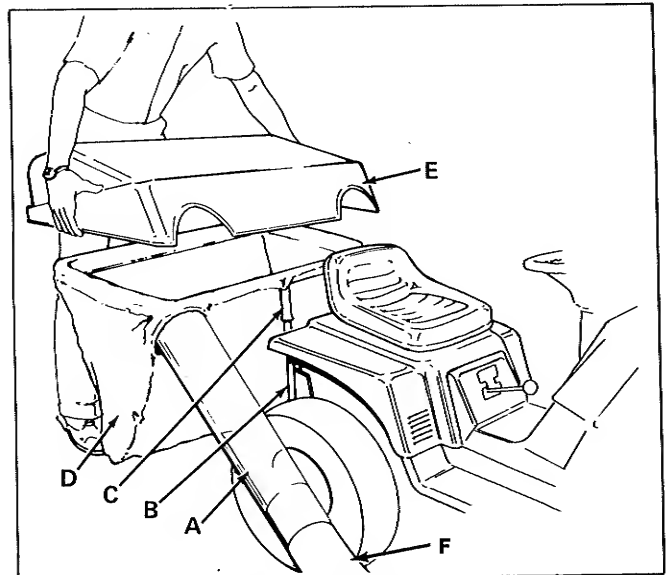


Figure 13. Install Bag and Cover

- | | |
|-------------------------|-----------------|
| A. Grass Discharge Tube | D. Bag Assembly |
| B. Hanger Tubes | E. Cover |
| C. Bag Tubes | F. Adaptor |

Setup Instructions

2. Slip grass discharge tube (A) into hole of bag assembly.
3. Position cover (E) over frame of bag assembly and push it down firmly so clips on underside of cover lock onto frame.

FRONT COUNTERWEIGHT

A counterweight (figure 14) must be installed on the tractor when using the grass catcher. Otherwise, the weight of the grass catcher and its contents may affect the steering ability of the tractor.

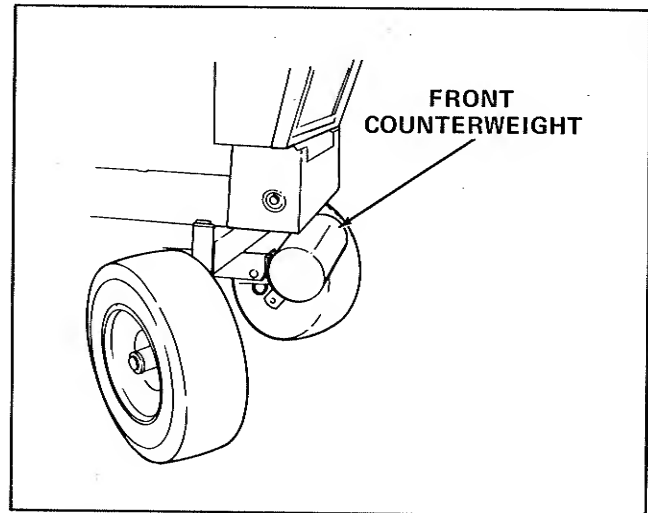
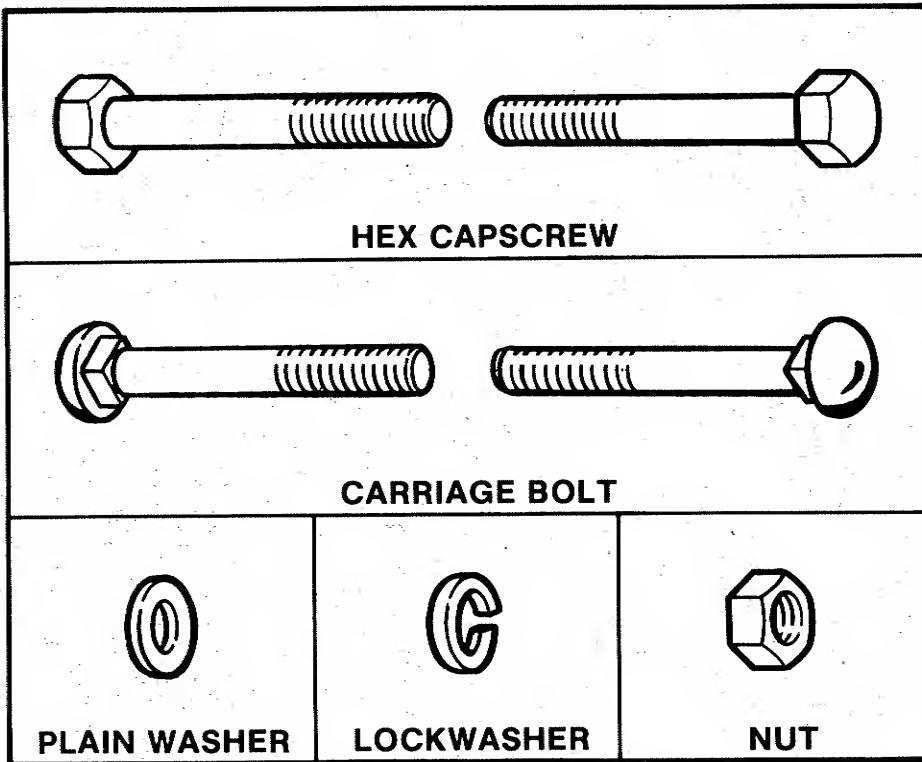
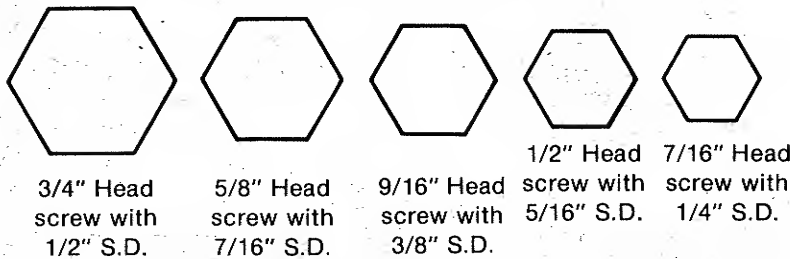


Figure 14. Front Counterweight

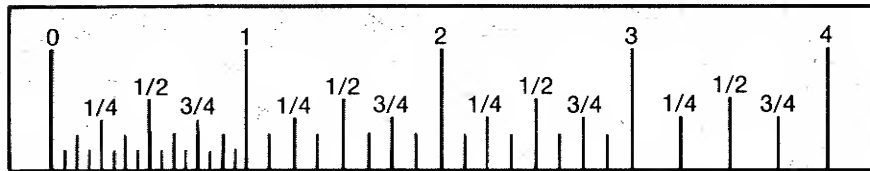


HEX CAPSCREW IDENTIFICATION

Shown below are actual size hex heads for standard screw sizes. Example: a 1/4" screw has a 7/16" head and thus requires a 7/16" wrench. To measure length, use the scale below.



S.D. = Shaft Diameter



WASHER AND NUT IDENTIFICATION

Place the washer or nut on the above scale to determine the inside diameter. The actual inside diameter can vary 1/16 inch. Use the scale for comparison.

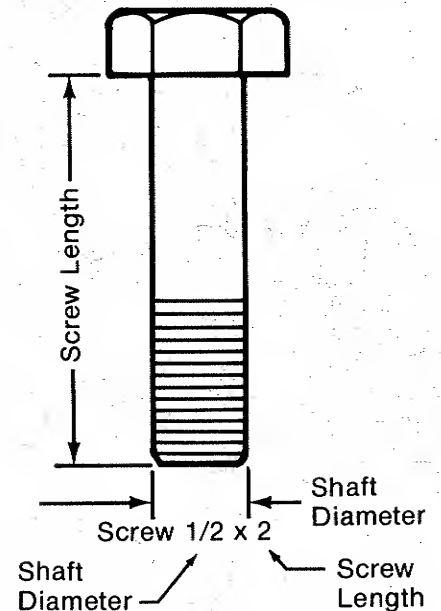
STANDARD FASTENER IDENTIFICATION CHART

Hardware sizes are given in the illustrations throughout this manual.

If a washer or nut is identified as "washer, 1/2" or "nut, 1/2", this means the inside diameter is 1/2 inch.

If a screw is identified as "screw, 1/2 x 2", this means the shaft diameter is 1/2 inch and the shaft of the screw is 2 inches long. If a screw is identified as "screw, 1/2-16 x 2", the number "16" means that the screw has 16 threads per inch.

SAMPLE: SCREW IDENTIFICATION



SAMPLE: NUT IDENTIFICATION

